

REMARKS

Claims 36-37, 41-43, 45-46, 50-52, and 54 are pending in the present application.

In the Office Action, claims 36-37, 41-43, 45-46, 50-52, and 54 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over Duvvury (U.S. Patent No. 6,140,683). The Examiner's rejections are respectfully traversed.

A finding of obviousness under 35 U.S.C. § 103 requires a determination of the scope and content of the prior art, the level of ordinary skill in the art, the differences between the claimed subject matter and the prior art, and whether the differences are such that the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made. *Graham v. John Deere Co.*, 148 USPQ 459 (U.S. S.Ct. 1966). To determine whether the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made, one should determine whether the prior art reference (or references when combined) teach or suggest all the claim limitations. Furthermore, it is necessary for the Examiner to identify the reason why a person of ordinary skill in the art would have combined the prior art references in the manner set forth in the claims.

Independent claims 37, 46, and 51, among other things, selecting a first distance from a first doped plug to a first boundary of the first doped well to provide approximately a desired breakover voltage between the first doped plug and the first doped region. For example, a first n-plug 104 may be positioned a distance "x" from a first edge 122 of a first n-well 106. The breakover voltage is therefore tunable by adjusting the distance "x." See Patent Application, pg. 14, ll. 19-22 and Figure 5. Applicant also describe and claim forming a second doped plug into the first doped region and forming at least one of a LOCOS oxide and a surface trench filled with an oxide between the first and second doped plugs.

Duvvury describes an ESD protection device that is formed in a high-voltage p-tank region 14 that the Examiner identifies as a “first doped region.” A drain extended region 16 (identified by the Examiner as a "first doped well") is formed in the region 14 and a drain region 20 (identified by the Examiner as a "first doped plug") is formed within the drain extended region 16. A field oxide region 24 is also formed within the drain extended region 16. See Duvvury, col. 2, ll. 45-60 and Figure 2a. Duvvury teaches that a gate coupling effect between drain and gate may be used to maximize the substrate current under an ESD event. The gate coupling effect is determined by a distance A, which is defined as the overlap of the drain extended region 16 and a portion of a gate electrode 28 at a thin oxide region. See Duvvury, col. 3, ll. 14-19 and Figure 2a. Based on this description, the Examiner alleges that Duvvury describes selecting a first distance from a first doped plug to a first boundary of the first doped well to provide approximately a desired breakover voltage between the first doped plug and the first doped region, as set forth in the independent claims. Applicant respectfully disagrees.

Duvvury teaches that the only distance that has any affect upon the gate coupling effect is the distance that corresponds to the overlapping portions of the drain extended region 16 and the gate electrode 28 at the thin oxide region, as shown in Figure 2a of Duvvury. Duvvury does not teach or suggest that the position of the drain region 20 has any influence on the gate coupling effect. Nor does Duvvury teach or suggest that the relative positioning of the drain region 20 and the drain extended region 16 has any influence on the gate coupling effect. Consequently, Applicant respectfully submits that Duvvury provides no teaching or suggestion that the gate coupling effect that is used to influence the substrate current under an ESD event can be modified or influenced by changing the distance between the drain region 20 and a boundary of the drain extended region 16. Applicant therefore respectfully submits that Duvvury fails to

teach or suggest selecting a first distance from a first doped plug to a first boundary of the first doped well to provide approximately a desired breakover voltage between the first doped plug and the first doped region, as set forth in the independent claims. Applicant also submits that the Examiner has not provided any reason that a person of ordinary skill in the art would modify the subject matter described in Duvvury to arrive at the subject matter set forth in the independent claims.

For at least the aforementioned reasons, Applicant respectfully submits that the Examiner has failed to make a *prima facie* case that the present invention is obvious over the prior art of record. Applicant requests that the Examiner's rejections of claims 36-37, 41-43, 45-46, 50-52, and 54 under 35 U.S.C. § 103(a) be withdrawn.

For the aforementioned reasons, it is respectfully submitted that all claims pending in the present application are in condition for allowance. The Examiner is invited to contact the undersigned at (713) 934-4050 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,

Date: October 2, 2007

/Terry D. Morgan/

Terry Morgan, Reg. No. 31,181
Williams, Morgan & Amerson
10333 Richmond, Suite 1100
Houston, Texas 77042
(713) 934-4050

Attorney for Applicant